coupling the remaining bands in the other channel to the channel output for those bands.

7 (Amended). [The method as set forth in claim 3 wherein said allocating step includes the steps of:] A method for providing full duplex operation in a two channel audio system wherein each channel includes a plurality of band pass filters, said method comprising the steps of:

applying a first input signal to a first channel and a second input signal to a second channel;

providing an indication of the magnitude of the signal in each band in each channel; and

allocating the signals in the first channel to a first channel output and the signals in the second channel to a second channel output by:

determining the duration of a signal exceeding a threshold; and

not allocating the signal if the duration of the signal exceeds a predetermined period.

REMARKS

Reconsideration of the above-identified application is respectfully requested. Entry of the foregoing amendment is respectfully requested. Claims 5, 6, and 7 were re-written in independent form. It is respectfully submitted that no new issues are involved because each claim changed in form only, not in substance, reducing the issues for appeal.

Claims 1 and 2 were rejected as anticipated by Berkley et al. In support of the rejection, the Examiner asserts that "Berkley discloses a speech processor using controlled center clipping." The point here is unclear. Applicants are not claiming center clipping. The comment appears irrelevant.

The Examiner further asserts "Berkley discloses a speech processing unit (17) ... coupled between the band input filters (19–23) ... and the summing junction (33a)." Reference number 17 refers to a box containing filters 19–23 and summing junction 33a. That is, the filters and the junction *are part of* processing unit 17. As such, how can the processing unit be coupled between elements within itself? The

Examiner's comment is at least unclear and is certainly not consistent with the disclosure of the Berkley et al. patent.

The Examiner further asserts that control unit 18 is "coupled to the speech processing unit (17) for coupling a subset of the band pass filters (19–23) to the summing junction (33a), as disclosed at column 3, lines 26–27." The cited passage reads "consists of a speech processor unit 17 and an echo signal-responsive control unit 18." The cited passage merely identifies elements 17 and 18. The passage says nothing about coupling a subset of the filters to the summation junction, nor could it. There is no multiplex circuit. FIGS. 2A and 2B are not plots of the transfer function of a multiplex circuit. As is clear from FIGS. 3A, 3B, and 3C, a signal is always passed by the clipping circuit. A subset of filters is not coupled to the summation junction, as recited.

The Examiner asserts that "Berkley discloses where the speech processing unit (17), with particular emphasis on paths 12 and 13, contains multiplexing equipment as supported by column 3, lines 17–21." The cited text reads "The paths 12, 13 are simply noncoincident, and might constitute different RF bands of a wideband radio channel using multiplexing equipment, or different physical entities such as a microwave radio path or a coaxial cable link." Patentee is saying is that his invention can also be used with transmission media other than telephone lines. The text does ***not*** say that processing unit 17 contains multiplexing equipment, as alleged by the Examiner.

The text says that the *paths* "might constitute different RF bands." The text does not say that unit 17 contains multiplexing equipment. The wideband radio includes multiplex equipment either to transmit into unit 17 or to receive from line 12.

Even if the *paths* are multiplexed by undisclosed equipment, such does not multiplex individual filters in those paths.

The occurrence of the word "multiplex" in a text is not disclosure of a multiplex circuit.

It is respectfully submitted that the rejection is based upon a convoluted reading of the Berkley et al. patent and an assertion of function that is simply not disclosed in the patent.

Claim 2 recites that the band pass filters have a pass band of one half octave or less. The Examiner refers to column 5, lines 5–7 of the Berkley et al. patent, which disclose "Advantageously, for the four lowest-frequency filters ... 1–octave filters may be used." The quoted language is **directly contrary** to the assertion of the Examiner. Thus, there is no anticipation.

Column 5, lines 7–10, of the Berkley et al. patent disclose that "A $1/3$ octave filter ... may advantageously be used at the top of the frequency band to complete the five–channel system." Thus, the Berkley et al. patent discloses using a **single** filter having a pass band of one half octave or less. Thus, there is no anticipation.

Concerning the Examiner's comment on page 10 of the Office Action, applicant did not assert that the Berkley et al. patent discloses using only a single filter. Applicant said that "the Berkley et al. patent discloses using a single filter *having a pass band of one half octave or less.*" It is respectfully submitted that the Examiner's selective reading does not advance the prosecution and, when applied to patent disclosures, tends to lead to conclusions that might not be shared by those of skill in the art.

There is no teaching or suggestion to use all $1/2$ octave filters. The voice band in a telephone (300–3000 Hz) does not divide evenly into octaves (powers of two). There are four octaves and a remainder. The fifth filter approximately fills the gap between the fourth filter and the top of the voice band. This portion of the disclosure relates more to grade school mathematics than to filter design.

Claims **3**, **4**, and **5** were rejected as anticipated by Petri et al. Claims 3 and 4 are canceled.

Claim 5 recites "finding the band with the largest signal." The Petri et al. patent discloses no apparatus for performing this step. Therefore, claim 5 is not anticipated by the Petri et al. patent. The Examiner alleges that this step is disclosed in the Petri et al. patent at column 4, lines 24–33. Line 24 begins in the middle of a sentence. Lines 23–33 include the following text.

> "For Each individual frequency sub-band TFl to TFn, a corresponding voice evaluation circuit SAl to SAn is provided. By comparing the occurring deviations from a preset rest level it is possible to ascertain whether greater voice activity is taking place in the sending

> direction or in the receiving direction. The appropriate corresponding level balance circuit PW1 to PWn is accordingly adjusted so that the attenuating device assigned to the less active direction of transmission, e.g. attenuation device DG1.1, receives greater attenuation."

Note the use of the comparative "greater," not the superlative "greatest." The allegation by the Examiner is contrary to the explicit disclosure of the patent. As is clear from FIG. 2, there is no connection, nor any means for comparing to find the largest signal among the bands and the Examiner has not identified any.

Claims **7**, **8**, and **11** were rejected as unpatentable over Petri et al. in view of Berkley et al. The deficiencies of these two patents are detailed above. In combination, the defects are not overcome. There is no basis for the combination, and none is asserted, other than applicant's claims; *In re Rouffet* 47 USPQ2d 1453 (Fed. Cir. 1998).

The Examiner refers applicant to pages 6–8 of the first Office Action for support for motivation to combine teachings. Pages 6–8 of the first Office Action are line-for-line identical with pages 6–8 of the final Office Action. Why the reference back? In neither location is motivation described. What element missing from the circuit described in the Petri et al. patent is supplied by some portion of the Berkley et al. patent? What is the basis for picking elements from either patent disclosure? Would not center clippers interfere with the operation of the attenuators? It is submitted that the proposed combination would render the apparatus described in the Petri et al. patent inoperative for its intended purpose.

With respect to claim 7, the Examiner "maintains that it was well known in the art to provide determining the duration of a signal exceeding a threshold and not allocating the signal if it exceeds a predetermined period, as taught by Berkley." The same allegation is made with respect to claim 11.

The Examiner alleges that "support is found at column 4, lines 40–68 and exhibited in figure 4." The cited text reads as follows.

> Pursuant to the invention, the attenuated outputs of control filters 19a-23a are fed respectively to peak detectors 39-43 which also perform the function of rectifying the received input signals. For peak detection,

> the detectors 39-43 are advantageously designed with the characteristic described in FIG. 4. There, representative rectified echo signals are schematically depicted as having different peak amplitudes as well as occasional gaps in time. In the absence of any signal, the detectors 39-43 generate no output; and the clipping levels in clippers 24-28 remain at zero, that is, no clipping occurs. On sensing a signal, each peak detector 39-43 generates an output that increases with a rise-time comparable to the speech bandwidth present. Thus, the control signal generated in detector 39, on being fed to the corresponding subband center clipper 24 of processor 17, causes the clipping level there to be at all times at least as high as necessary to prevent passage of the echo signal then present in that subband. As an alternative, the clipping levels instead of returning to zero may be adapted to return to a fixed minimum value. This is useful where, for example, it is desired to also reduce any reverberative signals that may be present.
>
> As the instantaneous echo signal commences to subside, the detectors 39-43 briefly hold the clipping level at the most recent control signal peak obtained. The hold-time should be greater than the echo end-delay, which may be up to 25 ms.

Contrary to the Examiner's assertion, the text contains no disclosure of determining the duration of a signal. Rise time is not duration. Hold time relates to a sample and hold circuit, not to the signal.

With respect to claim 8, the patents relied on do not disclose or suggest a first multiplex circuit, a second multiplex circuit, or a controller coupled to the multiplex circuits. The circuits alleged for these devices are structurally and functionally different and there is no basis for any modification to produce the claimed invention.

The second and third clauses of claim 11 clearly distinguish over the Petri et al. patent and the Berkley et al. patent, alone or in any combination.

In view of the foregoing amendment and remarks, it is respectfully submitted that claims 1, 2, and 5–12 are in condition for allowance and a Notice to that effect is respectfully requested.

Respectfully submitted,

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5. A method for providing full duplex operation in a two channel audio system wherein each channel includes a plurality of band pass filters, said method comprising the steps of:

applying a first input signal to a first channel and a second input signal to a second channel;

providing an indication of the magnitude of the signal in each band in each channel; and

allocating the signals in the first channel to a first channel output and the signals in the second channel to a second channel output by:

(a) finding the band having the largest signal;

(b) coupling the signal to the channel output for that band and blocking the signal in the corresponding band in the other channel from the other channel output;

(c) going to the other channel;

(d) repeating steps (a), (b), and (c) for each next largest signal from the remaining bands.

6. A method for providing full duplex operation in a two channel audio system wherein each channel includes a plurality of band pass filters, said method comprising the steps of:

applying a first input signal to a first channel and a second input signal to a second channel;

providing an indication of the magnitude of the signal in each band in each channel; and

allocating the signals in the first channel to a first channel output and the signals in the second channel to a second channel output by:

finding the band with the largest signal;

coupling the signal from that band and from alternate bands in the same channel to the channel output for those bands;

blocking the corresponding bands in the other channel from the channel output for those bands; and

coupling the remaining bands in the other channel to the channel output for those bands.

7. A method for providing full duplex operation in a two channel audio system wherein each channel includes a plurality of band pass filters, said method comprising the steps of:

applying a first input signal to a first channel and a second input signal to a second channel;

providing an indication of the magnitude of the signal in each band in each channel; and

allocating the signals in the first channel to a first channel output and the signals in the second channel to a second channel output by:

determining the duration of a signal exceeding a threshold; and

not allocating the signal if the duration of the signal exceeds a predetermined period.